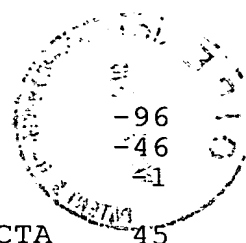


1/6

ATGTCCATGA ACTGCTGAGT GGATAAACAG CACGGGATAT CTCTGTCTAA  
 AGGAATATTA CTACACCAGG AAAAGGACAC ATTTCGACAAC AGGAAAGGAG  
 CCTGTACACAG AAAACCACAG TGTCTGTGTC ATGTGACATT TCGCC



ATG GGA AAC AAC TGT TAC AAC GTG GTG GTC ATT GTG CTG CTG CTA  
 Met Gly Asn Asn Cys Tyr Asn Val Val Val Ile Val Leu Leu Leu

GTG GGC TGT GAG AAG GTG GGA GCC GTG CAG AAC TCC TGT GAT AAC 90  
 Val Gly Cys Glu Lys Val Gly Ala Val Gln Asn Ser Cys Asp Asn

TGT CAG CCT GGT ACT TTC TGC AGA AAA TAC AAT CCA GTC TGC AAG 135  
 Cys Gln Pro Gly Thr Phe Cys Arg Lys Tyr Asn Pro Val Cys Lys  
 H4-1BB FI

AGC TGC CCT CCA AGT ACC TTC TCC AGC ATA GGT GGA CAG CCG AAC 180  
 Ser Cys Pro Pro Ser Thr Phe Ser Ser Ile Gly Gly Gln Pro Asn  
 H4-1BB FII

TGT AAC ATC TGC AGA GTG TGT GCA GGC TAT TTC AGG TTC AAG AAG 225  
 Cys Asn Ile Cys Arg Val Cys Ala Gly Tyr Phe Arg Phe Lys Lys

TTT TGC TCC TCT ACC CAC AAC GCG GAG TGT GAG TGC ATT GAA GGA 270  
 Phe Cys Ser Ser Thr His Asn Ala Glu Cys Glu Cys Ile Glu Gly

TTC CAT TGC TTG GGG CCA CAG TGC ACC AGA TGT GAA AAG GAC TGC 315  
 Phe His Cys Leu Gly Pro Gln Cys Thr Arg Cys Glu Lys Asp Cys

AGG CCT GGC CAG GAG CTA ACG AAG CAG GGT TGC AAA ACC TGT AGC 360  
 Arg Pro Gly Gln Glu Leu Thr Lys Gln Gly Cys Lys Thr Cys Ser  
 H4-1BB RI

TTG GGA ACA TTT AAT GAC CAG AAC GGT ACT GGC GTC TGT CGA CCC 405  
 Leu Gly Thr Phe Asn Asp Gln Asn Gly Thr Gly Val Cys Arg Pro  
 H4-1BB RII

TGG ACG AAC TGC TCT CTA GAC GGA AGG TCT GTG CTT AAG ACC GGG 450  
 Trp Thr Asn Cys Ser Leu Asp Gly Arg Ser Val Leu Lys Thr Gly

ACC ACG GAG AAG GAC GTG GTG TGT GGA CCC CCT GTG GTG AGC TTC 495  
 Thr Thr Glu Lys Asp Val Val Cys Gly Pro Pro Val Val Ser Phe

TCT CCC AGT ACC ACC ATT TCT GTG ACT CCA GAG GGA GGA CCA GGA 540  
 Ser Pro Ser Thr Thr Ile Ser Val Thr Pro Glu Gly Gly Pro Gly

GGG CAC TCC TTG CAG GTC CTT ACC TTG TTC CTG GCG CTG ACA TCG 585  
 Gly His Ser Leu Gln Val Leu Thr Leu Phe Leu Ala Leu Thr Ser

GCT TTG CTG CTG GCC CTG ATC TTC ATT ACT CTC CTG TTC TCT GTG 630  
 Ala Leu Leu Leu Ala Leu Ile Phe Ile Thr Leu Leu Phe Ser Val

Fig. 1

TITLE: NEW RECEPTOR AND RELATED PRODUCTS AND METHODS

INVENTORS' NAME: Byoung S. Kwon

SERIAL NO.: 08/955,572

2/6

CTC AAA TGG ATC AGG AAA AAA TTC CCC CAC ATA TTC AAG CAA CCA 675  
Leu Lys Trp Ile Arg Lys Lys Phe Pro His Ile Phe Lys Gln Pro

TTT AAG AAG ACC ACT GGA GCA GCT CAA GAG GAA GAT GCT TGT AGC 720  
Phe Lys Lys Thr Thr Gly Ala Ala Gln Glu Glu Asp Ala Cys Ser

TGC CGA TGT CCA CAG GAA GAA GAA GGA GGA GGA GGA GGC TAT GAG 765  
Cys Arg Cys Pro Gln Glu Glu Glu Gly Gly Gly Gly Gly Tyr Glu

CTG TGA 771  
Leu ---

TGTACTATCC	TAGGAGATGT	GTGGGCCGAA	ACCGAGAAGC	ACTAGGACCC	821
CACCATCCTG	TGGAACAGCA	CAAGCAACCC	CACCACCCTG	TTCTTACACA	871
TCATCCTAGA	TGATGTGTGG	GCGCGCACCT	CATCCAAGTC	TCTTCTAACG	921
CTAACATATT	TGTCTTTACC	TTTTTTTAAAT	CTTTTTTTTAA	ATTTAAATTT	971
TATGTGTGTG	AGTGTTTTGC	CTGCCTGTAT	GCACACGTGT	GTGTGTGTGT	1021
GTGTGTGACA	CTCCTGATGC	CTGAGGAGGT	CAGAAGACAA	AGGGTTGGTT	1071
CCATAAGAAC	TGGAGTTATG	GATGGCTGTG	AGCCGGNNNG	ATAGGTCGGG	1121
ACGGAGACCT	GTCTTCTTAT	TTTAACGTGA	CTGTATAATA	AAAAAAAAT	1171
GATATTTTCGG	GAATTGTAGA	GATTGTCCTG	ACACCCTTCT	AGTTAATGAT	1221
CTAAGAGGAA	TTGTTGATAC	GTAGTATACT	GTATATGTGT	ATGTATATGT	1271
ATATGTATAT	ATAAGACTCT	TTTACTGTCA	AAGTCAACCT	AGAGTGTCTG	1321
GTTACCAGGT	CAATTTTATT	GGACATTTTA	CGTCACACAC	ACACACACAC	1371
ACACACACAC	ACGTTTATAC	TACGTACTGT	TATCGGTATT	CTACGTCATA	1421
TAATGGGATA	GGGTAAAAGG	AAACCAAAGA	GTGAGTGATA	TTATTGTGGA	1471
GGTGACAGAC	TACCCCTTCT	GGGTACGTAG	GGACAGACCT	CCTTCGGACT	1521
GTCTAAAACT	CCCCTTAGAA	GTCTCGTCAA	GTTCCCGGAC	GAAGAGGACA	1571
GAGGAGACAC	AGTCCGAAAA	GTTATTTTTC	CGGCAAATCC	TTTCCCTGTT	1621
TCGTGACACT	CCACCCCTTG	TGGACACTTG	AGTGTCATCC	TTGCGCCGGA	1671
AGGTCAGGTG	GTACCCGTCT	GTAGGGGCGG	GGAGACAGAG	CCGCGGGGGA	1721
GCTACGAGAA	TCGACTCACA	GGGCGCCCCG	GGCTTCGCAA	ATGAAACTTT	1771
TTTAATCTCA	CAAGTTTTCG	CCGGGCTCGG	CGGACCTATG	GCGTCGATCC	1821
TTATTACCTT	ATCCTGGCGC	CAAGATAAAA	CAACCAAAG	CCTTGACTCC	1871
GGTACTAATT	CTCCCTGCCG	GCCCCCGTAA	GCATAACGCG	GCGATCTCCA	1921
CTTTAAGAAC	CTGGCCGCGT	TCTGCCTGGT	CTCGCTTTTC	TAAACGGTTC	1971
TTACAAAAGT	AATTAGTTCT	TGCTTTCAGC	CTCCAAGCTT	CTGCTAGTCT	2021
ATGGCAGCAT	CAAGGCTGGT	ATTTGCTACG	GCTGACCGCT	ACGCCGCCGC	2071
AATAAGGGTA	CTGGGCGGCC	CGTCGAAGGC	CCTTTGGTTT	CAGAAACCCA	2121
AGGCCCCCCT	CATACCAACG	TTTCGACTTT	GATTCTTGCC	GGTACGTGGT	2171
GGTGGGTGCC	TTAGCTCTTT	CTCGATAGTT	AGAC		2205

*Fig. 1 Cont'd*

TITLE: NEW RECEPTOR AND RELATED PRODUCTS AND METHODS

INVENTORS NAME: Byoung S. Kwon

SERIAL NO.: 08/955,572

3/6



human homologue of mouse 4-1bb

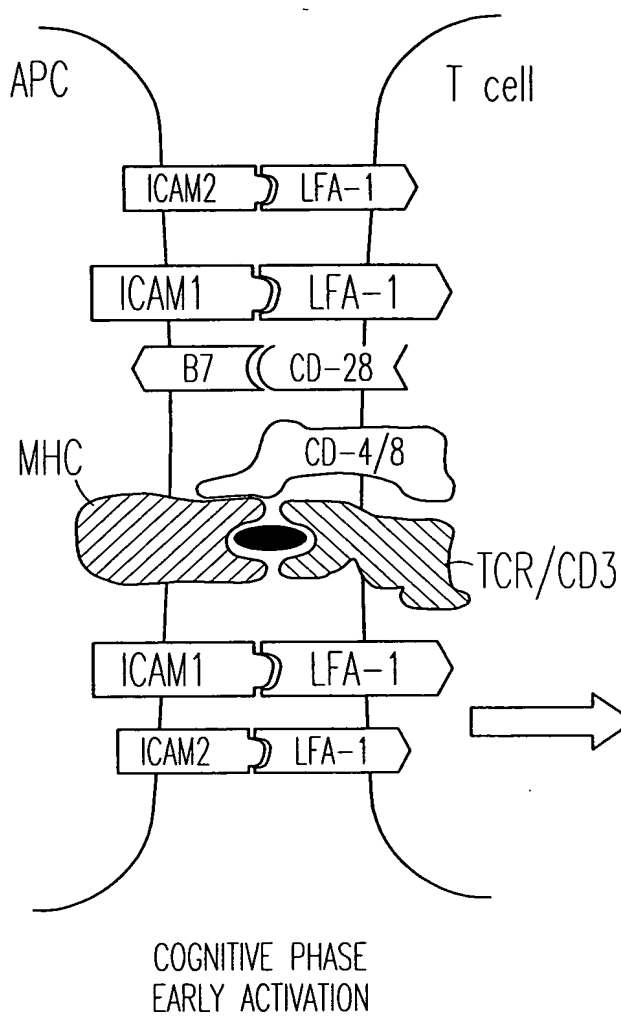
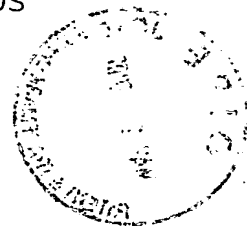
h4-1bb Length 838

1	AATCAGCTTT	GCTAGTATCA	TACCTGTGCC	AGATTTCATC	ATGGGAAACA
51	GCTGTTACAA	CATAGTAGCC	ACTCTGTTGC	TGGTCCTCAA	CTTTGAGAGG
101	ACAAGATCAT	TGCAGGATCC	TTGTAGTAAC	TGCCCAGCTG	GTACATTCTG
151	TGATAATAAC	AGGAATCAGA	TTTGCAGTCC	CTGTCCTCCA	AATAGTTTCT
201	CCAGCGCAGG	TGGACAAAGG	ACCTGTGACA	TATGCAGGCA	GTGTAAAGGT
251	GTTTTTCAGGA	CCAGGAAGGA	GTGTTCCCTCC	ACCAGCAATG	CAGAGTGTGA
301	CTGCACTCCA	GGGTTTCACT	GCCTGGGGGC	AGGATGCAGC	ATGTGTGAAC
351	AGGATTGTAA	ACAAGGTCAA	GAACTGACAA	AAAAAGGTTG	TAAAGACTGT
401	TGCTTTGGGA	CATTTAACGA	TCAGAAACGT	GGCATCTGTC	GACCCTGGAC
451	AAACTGTTCT	TTGGATGGAA	AGTCTGTGCT	TGTGAATGGG	ACGAAGGAGA
501	GGGACGTGGT	CTGTGGACCA	TCTCCAGCTG	ACCTCTCTCC	GGGAGCATCC
551	TCTGTGACCC	CGCCTGCCCC	TGCGAGAGAG	CCAGGACACT	CTCCGCAGAT
601	CATCTCCTTC	TTTCTTGCGC	TGACGTGCGC	TGCGTTGCTC	TTCTTGCTGT
651	TCTTCCTCAC	GCTCCGTTTC	TCTGTTGTTA	AACGGGGCAG	AAAGAACTC
701	CTGTATATAT	TCAAACAACC	ATTTATGAGA	CCAGTACAAA	CTACTCAAGA
751	GGAAGATGGC	TGTAGCTGCC	GATTTCCAGA	AGAAGAAGAA	GGAGGATGTG
801	AACTGTGAAA	TGGAAGTCAA	TAGGGCTGTT	GGGACTTT	

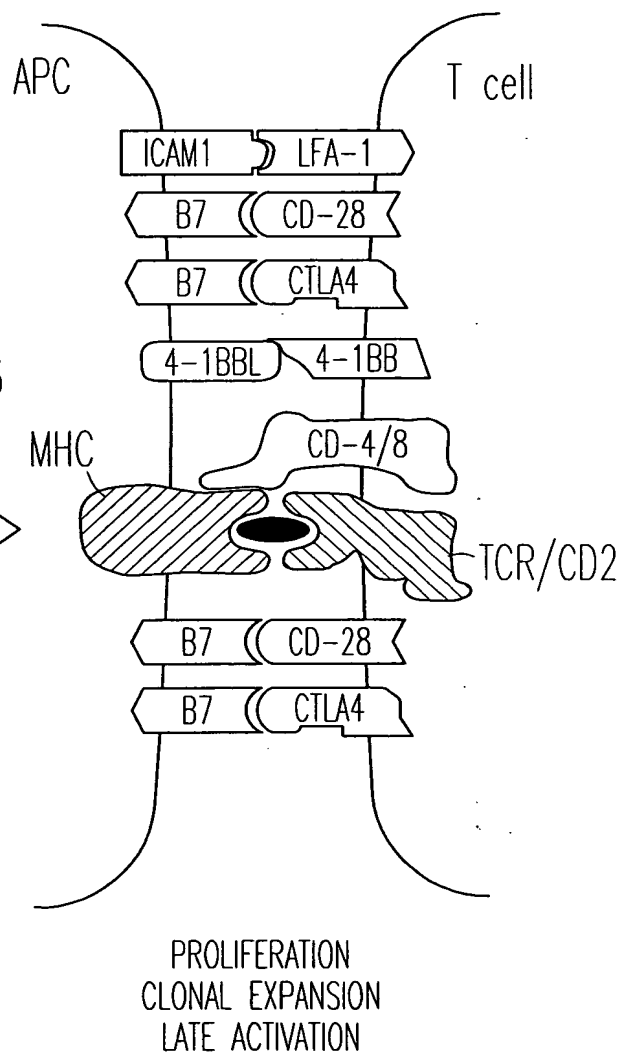
*Fig. 2A*

1	MGNSCYNIVA	TLLLVLNFER	TRSLQDPCSN	CPAGTFCDNN	RNQICSPCPP
51	NSFSSAGGQR	TCDICRQCKG	VFRTRKECSS	TSNAECDCTP	GFHCLGAGCS
101	MCEQDCKQGO	ELTKKGCKDC	CFGTFNDQKR	GICRPWTNCS	LDGKSVLVNG
151	TKERDVVCGP	SPADLSPGAS	SVTPPAPARE	PGHSPQIISF	FLALTSTALL
201	FLLFFLTLRF	SVVKRGRKKL	LYIFKQPFMR	PVQTTQEEDG	CSCRFPEEEE
251	GGCEL				

*Fig. 2B*



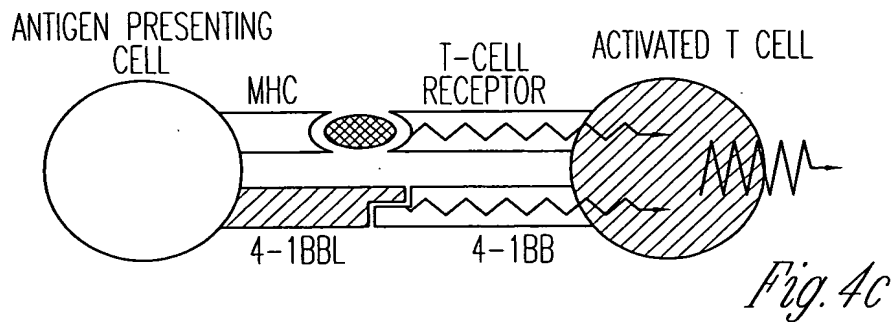
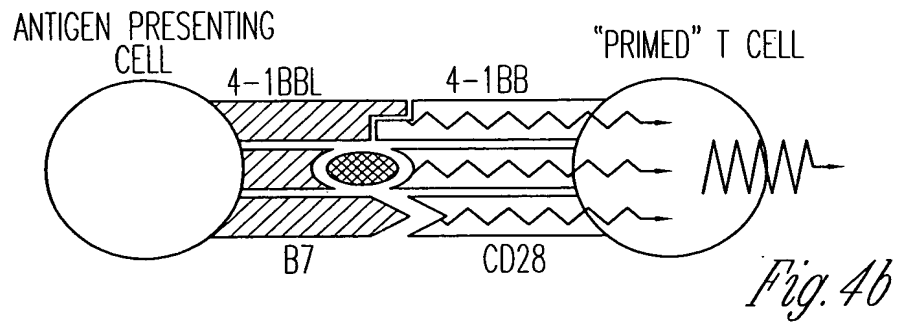
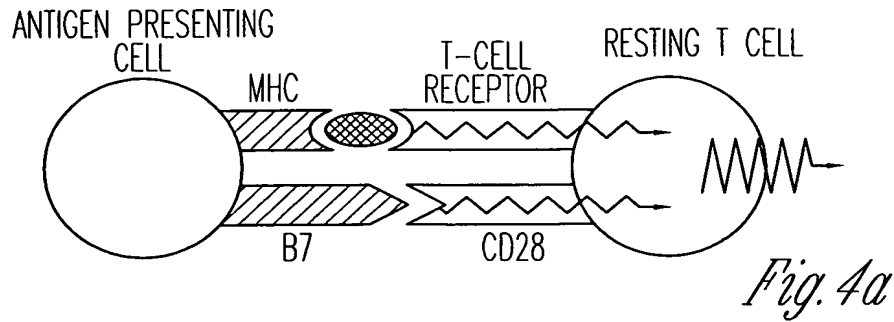
*Fig. 3a*



*Fig. 3b*



NORMAL T CELL ACTIVATION PATHWAY



## BLOCKING STEPS IN T-CELL ACTIVATION PATHWAY

